AMENDMENTS TO THE CLAIMS

Claim 1 (Currently Amended): An electrode for an ~~electric~~ electro-surgical operation device, comprising:

a hollow electrode formed in a hollow tube shape extending from a closed tip;

a first non-insulation area formed to a predetermined length from the closed tip;

~~an~~ a first insulation ~~coating~~ area formed on an outside surface of the hollow electrode beginning at ~~a~~ the predetermined length from the closed tip;

a refrigerant tube, having a smaller diameter than a diameter of the hollow electrode, inserted into the hollow electrode, the refrigerant tube configured to supply refrigerants into the hollow electrode ~~that~~ resulting to cool a living tissue in contact with the closed tip ~~of~~ and/or the hollow electrode, and further configured to externally discharge heat-exchanged refrigerants from the living tissue through a gap between the refrigerant tube and the hollow electrode;

at least one first hole formed on the outside surface of the ~~hollow electrode within the predetermined length from the closed tip~~ first non-insulation area;

the first hole operable to externally discharge a portion of the refrigerants supplied through the refrigerant tube ~~from the hollow electrode~~ into the living tissue in contact with the closed tip and/or the hollow electrode; and

a flow control mechanism formed on the outside surface of the ~~hollow electrode, within the predetermined length from the closed tip~~ first non-insulation area, and operable to act as a discharge resistance to the refrigerants discharged from the first hole, so as to control a flow of the refrigerants.

Claim 2 (Canceled)

Claim 3 (Currently Amended): The electrode of claim 1, further comprising:

a saline solution pipe inserted onto the outside surface of the hollow electrode with a predetermined gap, and having ~~an~~ a second non-insulation area at another predetermined length toward the closed tip and a second insulation ~~coating~~ area on the outside surface except ~~within~~ the ~~predetermined length of the closed tip~~ second non-insulation area;

the saline solution pipe operable to infuse a saline solution through the gap, and discharge the saline solution through at least one second hole formed on the outside surface ~~located within the predetermined length from the closed tip~~ of the second non-insulation area.

Claim 4 (Previously Presented): The electrode of claim 3, wherein the hollow electrode and the saline solution pipe are conductive, further comprising:

a power source operable to apply different power to the hollow electrode and the saline solution pipe; and

an insulation member formed on the surface of the hollow electrode and configured to prevent short circuit of the saline solution supplied through the gap between the hollow electrode and the saline solution pipe.

Claim 5 (Currently Amended): The electrode of claim 4, wherein the insulation member comprises ~~an~~ the first insulation ~~coating~~ area formed on the surface of the hollow electrode, and an

insulation packing provided between the hollow electrode and the saline solution pipe.

Claim 6 (Previously Presented): The electrode of claim 1, wherein the closed tip of the hollow electrode is a conductive spear head, and the hollow electrode and the spearhead are incorporated with each other.

Claim 7 (Currently Amended): The electrode of claim 1, wherein the flow control mechanism is a hollow tube inserted onto the outside surface of the ~~hollow electrode where the insulation coating has not been formed~~ first non-insulation area, and having a third hole on the outside surface, the flow control mechanism controlling a volume of the discharged refrigerants by alternately installing the first hole of the hollow electrode and the third hole of the hollow tube~~,~~ and operating as a discharge resistance to the refrigerants discharged from the first hole.

Claim 8 (Currently Amended): The electrode of claim 7, wherein compression units of the hollow tube are formed in a zigzag shape on a discharge passage ~~of~~ from the first hole~~,~~ to the third hole ~~and both ends of the hollow tube~~, and operated as discharge resistances to the refrigerants discharged from the first hole, ~~for controlling~~ so as to control the volume of the discharged refrigerants.

Claim 9 (Currently Amended): The electrode of claim 1, wherein the flow control mechanism is a porous metal sintered body layer formed on the outside surface of the ~~hollow electrode within the predetermined length from the closed tip~~ first non-insulation area;

the sintered body layer operable to act as discharge resistance to the refrigerants discharged from the first hole, so as to [a] control the volume of the discharged refrigerants.

Claim 10 (Canceled)

Claim 11 (Canceled)

Claim 12 (Canceled)

Claim 13 (Canceled)

Claim 14 (Canceled)

Claim 15 (Currently Amended): The electrode of claim 3, wherein the flow control mechanism is a hollow tube inserted onto the outside surface of the ~~hollow electrode where the insulation coating has not been formed~~ first non-insulation area, and having a third hole on the outside surface, the flow control mechanism controlling a volume of the discharged refrigerants by alternately installing the first hole of the hollow electrode and the third hole of the hollow tube~~,~~ and operating as a discharge resistance to the refrigerants discharged from the first hole.

Claim 16 (Currently Amended): The electrode of claim 4, wherein the flow control mechanism is a hollow tube inserted onto the outside surface of the ~~hollow electrode where the~~

~~insulation coating has not been formed~~ first non-insulation area, and having a third hole on the outside surface, the flow control mechanism controlling a volume of the discharged refrigerants by alternately installing the first hole of the hollow electrode and the third hole of the hollow tube~~,~~ and operating as a discharge resistance to the refrigerants discharged from the first hole.

Claim 17 (Currently Amended): The electrode of claim 5, wherein the flow control mechanism is a hollow tube inserted onto the outside surface of the ~~hollow electrode where the insulation coating has not been formed~~ first non-insulation area, and having a third hole on the outside surface, the flow control mechanism controlling a volume of the discharged refrigerants by alternately installing the first hole of the hollow electrode and the third hole of the hollow tube~~,~~ and operating as a discharge resistance to the refrigerants discharged from the first hole.

Claim 18 (Canceled)

Claim 19 (Canceled)

Claim 20 (Canceled)

Claim 21 (New): An electrode for an electro-surgical operation device, comprising:

a hollow electrode formed in a hollow tube shape extending from a closed tip;

a first non-insulation area formed to a predetermined length from the closed tip;

a first insulation area formed on an outside surface of the hollow electrode

beginning at the predetermined length from the closed tip;

a refrigerant tube, having a smaller diameter than a diameter of the hollow electrode, inserted into the hollow electrode, the refrigerant tube configured to supply refrigerants into the hollow electrode resulting to cool a living tissue in contact with the closed tip and/or the hollow electrode, and further configured to externally discharge heat-exchanged refrigerants from the living tissue through a gap between the refrigerant tube and the hollow electrode; and

a refrigerant discharging mechanism formed in the first non-insulation area, operable to externally discharge a portion of the refrigerants supplied through the refrigerant tube into the living tissue in contact with the closed tip and/or the hollow electrode.

Claim 22 (New): The electrode of claim 21, further comprising:

a saline solution pipe inserted onto the outside surface of the hollow electrode with a predetermined gap, and having a second non-insulation area at another predetermined length toward the closed tip and a second insulation area on the outside surface except the second non-insulation area;

the saline solution pipe operable to infuse a saline solution through the gap, and discharge the saline solution through at least one second hole formed on the outside surface of the second non-insulation area.

Claim 23 (New): The electrode of claim 22, wherein the hollow electrode and the saline solution pipe are conductive, further comprising:

a power source operable to apply different power to the hollow electrode and the

saline solution pipe; and

an insulation member formed on the surface of the hollow electrode and configured to prevent short circuit of the saline solution supplied through the gap between the hollow electrode and the saline solution pipe.

Claim 24 (New): The electrode of claim 4, wherein the insulation member comprises the first insulation area formed on the surface of the hollow electrode, and an insulation packing provided between the hollow electrode and the saline solution pipe.

Claim 25 (New): The electrode of claim 21, wherein the refrigerant discharging mechanism is a porous metal sintered body formed in the first non-insulation area;

the sintered body operable to act a discharge resistance to the refrigerants supplied through the refrigerant tube, so as to control the volume of the discharged refrigerants.

Claim 26 (New): A method for an electro-surgical operation comprising:

inserting an ablation device including at least one electrode into a wanted region in a living body; and

proceeding a radio-frequency ablation at the wanted region, when relatively much refrigerant is supplied from the outside into the electrode so as to cool a living tissue in contact with the electrode and relatively little refrigerant discharges into the living tissue.

Claim 27 (New): The method of claim 26, wherein the discharged refrigerant is a portion of

refrigerant supplied so as to cool the living tissue.

Claim 28 (New): The method of claim 26, wherein the discharged refrigerant is supplied into the living tissue through at least one different channel from a channel for supplying the refrigerant so as to cool the living tissue.